

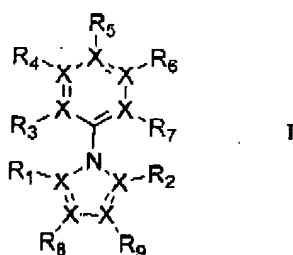
Applicant(s) : Shibo JIANG and Asim Kumar DEBNATH  
U.S. Serial No.: 10/706,027  
Filed : November 12, 2003  
Page : 3

RECEIVED  
CENTRAL FAX CENTER  
SEP 20 2006

Amendments to the claims:

1-38. (Canceled)

39. (New) An antiviral pharmaceutical composition comprising an effective amount of a compound of the formula I,



or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier,

wherein X can be C or N, and when N is at any X position, the corresponding R group is not there;

R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of H, alkyl, alkenyl, alkynyl, halogen, CN, nitro, OH and OR, where R is alkyl; and

R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> are each independently selected from the group consisting of H, alkyl, cycloalkyl, alkenyl, alkynyl, aryl, arylalkyl, heterocyclyl, tetrazolyl, halogen, CHO, OH, CN, NO<sub>2</sub> and OR, where R is alkyl, NHR, where R is H or alkyl, COOR, where R is H or alkyl, SO<sub>3</sub>R, where R is H or alkyl, SO<sub>2</sub>NHR, where R is H or alkyl.

Applicant(s) : Shibo JIANG and Asim Kumar DEBNATH  
U.S. Serial No.: 10/706,027  
Filed : November 12, 2003  
Page : 4

40. (New) The antiviral pharmaceutical composition of claim 39, wherein at least one of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and  $R_9$  is COOH or another acidic group.
41. (New) The antiviral pharmaceutical composition of claim 39, wherein the group alkyl is an unsubstituted or substituted, straight or branched alkyl chain carrying 1 to 6 carbon atoms.
42. (New) The antiviral pharmaceutical composition of claim 39, wherein alkyl is methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl or tert-butyl.
43. (New) The antiviral pharmaceutical composition of claim 39, wherein alkenyl is an unsubstituted or substituted, straight or branched alkenyl chain carrying 2 to 6 carbon atoms.
44. (New) The antiviral pharmaceutical composition of claim 39, wherein the alkenyl is vinyl, 1-propenyl, 2-propenyl, butenyl or its isomers.
45. (New) The antiviral pharmaceutical composition of claim 39, wherein alkynyl is an unsubstituted or substituted, straight or branched alkynyl chain carrying 2 to 6 carbon atoms.
46. (New) The antiviral pharmaceutical composition of claim 39, wherein alkynyl group is ethynyl, propynyl or its isomer,

Applicant(s) : Shibo JIANG and Asim Kumar DEBNATH  
U.S. Serial No.: 10/706,027  
Filed : November 12, 2003  
Page : 5

or butynyl or its isomers.

47. (New) The antiviral pharmaceutical composition of claim 39, wherein suitable substituents of alkyl, alkenyl and alkynyl can be selected from one or more of amino, cyano, halogen, hydroxy, alkoxy, aryloxy, aryl, heterocyclyl, carboxy, nitro, alkyl sulfonyl, aryl sulfonyl, thio, alkyl thio, or aryl thio.
48. (New) The antiviral pharmaceutical composition of claim 39, wherein cycloalkyl is an unsubstituted or substituted cycloalkyl group containing 3 to 7 carbon atoms.
49. (New) The antiviral pharmaceutical composition of claim 39, wherein the cycloalkyl is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, or cycloheptyl.
50. (New) The antiviral pharmaceutical composition of claim 39, wherein the cycloalkyl is optionally fused to an aromatic group.
51. (New) The antiviral pharmaceutical composition of claim 39, wherein the aryl is unsubstituted or substituted phenyl or naphthyl.
52. (New) The antiviral pharmaceutical composition of claim 39, wherein the heterocyclyl group is quinolinyl, pyridyl, indolyl, furyl, oxazolyl, thienyl, triazolyl, pyrazolyl, imidazolyl, benzimidazolyl, piperazinyl, or benzothiazolyl.

Applicant(s) : Shibo JIANG and Asim Kumar DEBNATH  
U.S. Serial No.: 10/706,027  
Filed : November 12, 2003  
Page : 6

53. (New) The antiviral pharmaceutical composition of claim 39, wherein the heterocyclyl group is optionally substituted with a saturated, partially saturated, or aromatic cyclic, which may contain one or more heteroatoms selected from nitrogen, oxygen or sulfur.
54. (New) The antiviral pharmaceutical composition of claim 39, wherein the halogen group is chloro, bromo, fluoro, or iodo.
55. (New) The antiviral pharmaceutical composition of claim 39, wherein the compound of the formula I is acidic and capable of forming pharmaceutically acceptable salts with inorganic and organic bases.
56. (New) The antiviral pharmaceutical composition of claim 55, wherein the base is sodium hydroxide, potassium hydroxide, calcium hydroxide, barium hydroxide, magnesium hydroxide, or N-ethyl piperidine.
57. (New) The antiviral pharmaceutical composition of claim 55, wherein the compound of the formula I is acidic; X is C; R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are each H; R<sub>4</sub> is COOH; R<sub>5</sub> is Cl; and R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> are each H.
58. (New) The pharmaceutical composition of claim 39 for treating human immunodeficiency virus (HIV) infection.
59. (New) A method for inhibiting replication of human immunodeficiency virus in cells comprising contacting cells

Applicant(s) : Shibo JIANG and Asim Kumar DEBNATH  
U.S. Serial No.: 10/706,027  
Filed : November 12, 2003  
Page : 7

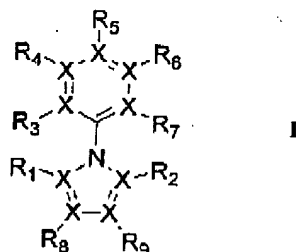
with an effective amount of a compound of the formula I to inhibit the replication of the human immunodeficiency virus.

60. (New) The method of claim 59, further comprising an effective amount of an Acquired Immunodeficiency Syndrome (AIDS) treatment agent selected from the group consisting of anti-HIV agents, anti-infective agents, and immunomodulators.
61. (New) A method for treating mammals infected with the human immunodeficiency virus, comprising administering to said mammals an effective amount of a compound of the formula I, or its pharmaceutically acceptable salts thereof.
62. (New) The method of claim 61, further comprising an effective amount of an Acquired Immunodeficiency Syndrome (AIDS) treatment agent selected from the group consisting of anti-HIV agents, anti-infective agents, and immunomodulators.
63. (New) A method for preventing manifestation of Acquired Immunodeficiency Syndrome (AIDS) in a subject comprising administering to the subject an amount of a compound of the formula I effective to prevent said syndrome in the subject.
64. (New) The method of claim 63, further comprising an effective amount of an Acquired Immunodeficiency Syndrome (AIDS) treatment agent selected from the group consisting

Applicant(s) : Shibo JIANG and Asim Kumar DEBNATH  
U.S. Serial No.: 10/706,027  
Filed : November 12, 2003  
Page : 8

of anti-HIV agents, anti-infective agents, and immunomodulators.

65. (New) A compound of the formula I,



or a pharmaceutically acceptable salt thereof,  
wherein X is C; R<sub>1</sub> and R<sub>2</sub> are CH<sub>3</sub>; R<sub>3</sub> is H; R<sub>4</sub> is OH; R<sub>5</sub> is COOH; and R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> are each H.

66. (New) An antiviral pharmaceutical composition comprising an effective amount of the compound of claim 65.
67. (New) A method for inhibiting replication of human immunodeficiency virus in cells, treating mammals infected with the human immunodeficiency virus, or preventing manifestation of Acquired Immunodeficiency Syndrome (AIDS) in a subject comprising contacting the cells with the compound of claim 65, or administering to the mammals or subject an antiviral pharmaceutical composition of claim 65.
68. (New) The method of claim 67, further comprising an effective amount of an Acquired Immunodeficiency Syndrome (AIDS) treatment agent selected from the group consisting

Applicant(s) : Shibo JIANG and Asim Kumar DEBNATH  
U.S. Serial No.: 10/706,027  
Filed : November 12, 2003  
Page : 9

of anti-HIV agents, anti-infective agents, and  
immunomodulators.